Knowing the moisture content of forages assures the buyer of its nutritional value and the seller of its fair market value.

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Oregon • Idaho • Washington
To determine the equivalent price for your wet forage, simply multiply the appropriate relative value factor by the going price for similar quality hay.

_example_: Assume a stored hay price of $70 per ton and a 30% dry-matter silage, which has a relative value of .333.

\[
\frac{\$70.00/\text{ton hay}}{.333} = \frac{\$23.31/\text{ton value of silage}}{.333}
\]

Consider harvesting and storage losses when you price forages. Dry-matter content at harvest directly affects dry-matter losses (figure 1). Field losses increase, but storage losses decline, as the forage dry matter increases. Field-cured hay has the highest harvest dry-matter loss, but the lowest storage loss.

If you sell the crop as dry hay, you absorb the dry matter losses that occur at harvest. If you sell as green chop, haylage, or silage, the buyer absorbs the losses that occur during storage. Both buyer and seller should consider this shift in losses when pricing forages.

**Sampling and testing forages for moisture**

It's important to collect a representative sample from the crop when pricing on dry matter. Several samples will help overcome the variation in moisture within a truckload. Collect and transport samples in airtight plastic containers.

Buyer and seller should agree on the sampling, testing, and pricing methods. The two parties should agree on paying the cost of testing, too.

A number of commercial feed-testing laboratories will rush the results of a moisture test back to the sender if the sender requests it. Nutritional analyses done on the same samples can be sent later. Your Extension agent can recommend several forage testing labs to use.

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Table 1.—Relative values of forages with different dry-matter contents

<table>
<thead>
<tr>
<th>Feed</th>
<th>% Dry matter</th>
<th>Relative value (stored hay = 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stored hay</td>
<td>90</td>
<td>1.000</td>
</tr>
<tr>
<td>Freshly baled hay</td>
<td>84</td>
<td>.933</td>
</tr>
<tr>
<td>Wilted silage</td>
<td>40</td>
<td>.84</td>
</tr>
<tr>
<td></td>
<td>35</td>
<td>.81</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>.78</td>
</tr>
<tr>
<td>Direct cut silage or green chop</td>
<td>25</td>
<td>.77</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>.73</td>
</tr>
</tbody>
</table>

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Figure 1.—Estimated total field and harvest loss and storage loss when legume-grass forages are harvested by varying methods and at varying moisture levels.

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*This publication is out of date. For most current information: [http://extension.oregonstate.edu/catalog](http://extension.oregonstate.edu/catalog)*
You can do quick moisture analyses in your kitchen with a good scale and a microwave oven. For green chop, haylage, or silage, follow this procedure:

1. Weigh a paper bag large enough to hold 4 ounces of your forage. Write down the weight as value “A”.
2. Place about 4 ounces or 100 grams of your forage in the paper bag and weigh again (figure 2). Write this down as value “B”.
3. With a cup of water in the corner of the oven, begin drying the sample with the medium power setting of the oven (figure 3). Dry for 3 minutes, remove the sample, and stir gently. Dry for another 1½ minutes, stir, and dry for 1 minute.
4. The sample should be getting dry and crisp. Weigh the sample and bag (figure 4), stir again gently, and dry for 30 seconds. Continue the 30-second drying and weighing until the weight doesn’t change. If the sample begins to char, use the last weight. Record this final weight as “C”.
5. Calculate the dry matter using this formula:

\[
\text{% Dry matter} = \frac{C - A}{B - A} \times 100
\]

Experiment with drying times before running an “official” sample. Some ovens don’t heat uniformly. Dry your sample in different places in the oven. Some discoloration is normal, but blackened forage indicates you have burned off some of the dry matter.

A small dietetic or kitchen scale that weighs in grams will serve your weighing needs. They sell for $25-$30. A little moist feed will improve animal intake, but don’t pay for moisture you don’t need. A few quick tests and calculations will keep forage producers and users happy with their farms’ production.

Figure 2.—After you place your forage in the bag, weigh it again.

Figure 3.—Dry your sample for 3 minutes, medium power setting.

Figure 4.—Weigh your sample again. Repeat the drying and weighing till your sample’s weight doesn’t change.
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